

# Chuong Dang TA

📍 Stockholm, Sweden | Willing to relocate

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## About Me

Energy systems and data science enthusiast with a thermal engineering background. Expected to graduate in **September 2026** from an Erasmus Mundus MSc (**DENSYS**), with a thesis at **rebase.energy** (Stockholm) forecasting wind turbine icing power losses at 1-36 hour lead times on multi-year Swedish SCADA and ERA5-Land data, combining an extended **IEA Wind Task 19** framework with bias correction and a two-stage **LightGBM** classifier-regressor. Published author in 2 peer-reviewed Q1 journals with impact factors of 11.8 and 9.2 on hydrogen integration and decarbonisation pathways.

## Education and Training

**Univeristy of Lorraine, France & Politechnique of Turin, Italy** - [densys.univ-lorraine.fr](https://densys.univ-lorraine.fr) Sep 2024 – Sep 2026  
**Master of Science in Decentralised and Smart Energy Systems (DENSYS)**

A two-year Erasmus Mundus Joint Master's program (120 ECTS) focusing on the modeling, control, and optimization of decentralised and renewable energy systems.

### Selected Coursework:

- Univeristy of Lorraine: [Data and Forecasting in Microgrids], [Optimal Local Design Energy Network].
- Politechnique of Turin: [Polygeneration and Advanced Energy Systems], [Smart Electricity Systems].

### Key Projects:

- *Machine Learning (ML) Enhanced LCA of a North Sea Offshore Wind Farm*: Developed integrated LCA-ML framework achieving  $12,600\times$  computational acceleration ( $R^2=98.5\%$ ) for rapid environmental optimization across 285 design scenarios.

**Hanoi University of Science and Technology (HUST), Vietnam** - [hust.edu.vn/en](https://hust.edu.vn/en) Aug 2018 – Jan 2023

### Bachelor in Thermal Engineering

Graduated **1<sup>st</sup>/218** with a CGPA of 3.54/4.00 from Vietnam's leading technical university. Core studies covered thermodynamics, heat transfer, district heating and cooling systems, and power plant systems.

**Bachelor Thesis:** “*Techno-Economic Analysis of Internal Combustion Engines Using Diesel and LNG*” (Grade: 9.5/10)

## Scientific Research - ORCID: 0009-0009-7530-7430

- Dang-Chuong Ta; Thanh-Hoang Le; Long Van Phan; Hoang-Luong Pham, “Feasibility Analysis of Hydrogen Co-Firing in Vietnam’s Gas Power Plants for the Period 2035–2050,” *Energy Conversion and Management*, Impact Factor: 11.8, **2025**. DOI: [10.1016/j.enconman.2025.120192](https://doi.org/10.1016/j.enconman.2025.120192)
- Dang-Chuong Ta; Thanh-Hoang Le; Hoang-Luong Pham, “An Assessment of the Potential for Large-Scale Hydrogen Export from Vietnam to Asian Countries: Techno-Economic Analysis, Transport Options, and Energy Carrier Comparison,” *International Journal of Hydrogen Energy*, Impact Factor: 9.2, **2024**. DOI: [10.1016/j.ijhydene.2024.04.033](https://doi.org/10.1016/j.ijhydene.2024.04.033)
- (*Ongoing*) Dang-Chuong Ta et al., “Wind Farm-Scale Forecasting of Turbine Icing Power Losses Using Multi-Ridge Regression Models,” based on MSc thesis research at rebase.energy - extending the turbine-level classifier-regressor framework with multi-ridge regression models and upscaling to wind farm-level forecasts.

## Work Experience

**rebase.energy**, Stockholm, Sweden - [rebase.energy](https://rebase.energy)

Jul 2026 – Present

### Research Intern - Wave Energy Converter Power Forecasting

- Developing power forecasting models for Wave Energy Converters, benchmarking multiple ridge-regularised and tree-based models (**Ridge Regression**, **Random Forest**, **LightGBM**) against deep learning architectures (**BiLSTM**, **TCN**) for time-series power prediction.

## Master Thesis Student

- **Icing Detection & Feature Engineering:** Established icing labels on multi-year Swedish turbine SCADA data using an extended **IEA Wind Task 19 Sigmoid Performance Ratio** framework. Diagnosed inter-annual non-stationarity and wind speed-temperature overlap between icing and non-icing regimes, and corrected SCADA-ERA5-Land biases via **Quantile Mapping** and **LightGBM**. Applied **Spearman** correlation and **SHAP** screening across multiple physical feature groups to remove unstable predictors.
- **Probabilistic Power-Loss Forecasting:** Built a two-stage **LightGBM** classifier-regressor, trained with walk-forward cross-validation over multiple winters, to forecast wind power icing losses at **1-36 hour** lead times. Benchmarked Persistence, Oracle, Realistic NWP, and SCADA-only scenarios on a blind winter test set, showing local SCADA signals dominate near-term skill while NWP forecasts are essential for longer horizons - a key trade-off for operational resilience under changing conditions.

**Vietnam Petroleum Institute (VPI)**, Hanoi, Vietnam - [vpi.pvn.vn/en](https://vpi.pvn.vn/en)

Feb 2024 – Aug 2024

## Junior Researcher

Contributed to Vietnam's national hydrogen roadmap by conducting feasibility studies on the integration of green hydrogen into thermal power plants. Handled techno-economic modeling, hydrogen cost benchmarking, and policy analysis.

**Vietnam Initiative for Energy Transition (VIETSE)**, Hanoi, Vietnam

May 2023 – Sep 2023

## Research Intern

Modeled hybrid renewable systems (solar, wind, BESS) using HOMER Pro and Python; analyzed system performance under different policy scenarios; contributed to policy briefs for Thai and Vietnamese stakeholders.

## Technical Skills

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- **Data Science & Optimisation:** Developing hybrid, physics-informed ML models for energy system forecasting and predictive maintenance; applied **MILP, MINLP, and heuristic algorithms** (e.g., genetic algorithms) in Pyomo to optimize renewable energy systems.
- **Technical Toolset:** Python (PyTorch, Scikit-learn, TensorFlow, Pyomo, PyWake), MATLAB/Simulink, Modelica, QBlade, HOMER Pro, GIS, Aspen Plus, Typst, LaTeX.

## Honors & Awards

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- **Erasmus Mundus scholarship** for DENSYS Joint Master Program
- **JNED Award** for research on Japan's nuclear facilities (2023)

## Short Courses & Certifications

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- Wind Energy- Technical University of Denmark (DTU)
- 4th Training Course on Nuclear Power Plant Technology - The International Nuclear Energy Development of Japan Co., Ltd (JINED) (studied in Vietnam and Japan)
- Optimisation with Python: Complete Pyomo with Bootcamp A-Z
- Hydro, Wind & Solar Power - École Polytechnique de Paris

## Language

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- Vietnamese (Native)
- English (IELTS 7.5 - Full Professional)
- German (A2), French (A1)

## Referees

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**Prof. Fabrice Lemoine** - Chair of the DENSYS Erasmus Mundus Joint Master Degree, Université de Lorraine

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**Marta Gandiglio** - Associate Professor, Department of Energy (DENERG), Politecnico di Torino

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